

Full Length Research Paper

The state of cervical cancer screening services and barriers to uptake in Abidjan, Côte D'Ivoire in 2017: A mixed methods study

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Cervical cancer (CC) remains a public health concern in Cote d'Ivoire. The national policy for the prevention of cervical cancer has been introduced more than 10 years ago, while the coverage of the target population is still suboptimal. We aimed at describing the barriers to screening among women in Abidjan. A mixed method study was completed from February to August 2016. Stakeholders were interviewed according to their role in the cervical cancer screening program while women were requested to participate in focus groups. Subjects discussed included knowledge, risk factors and prevention of CC, as well as barriers to CC screening. In addition, a site assessment was carried out among 27 CC visual inspection-based screening sites in order to describe the structural barriers to CC screening. Overall, 10 (37.0%), 3 (11.1%) and 2 (7.4%) proposed Pap test colposcopy and HPV testing, respectively. Cryotherapy and Loop Excision Procedure (LEEP) were available in 13 (48.2%) and 3(11.1%) sites, respectively. During the last twelve months, the provision of CC screening services has been interrupted in 9 (33.3%) and 18 (66.7%) sites due to staff turnover and shortage of essential supplies, respectively. The main barriers to screening for women were the lack of knowledge about CC, the fear of the results and the lack of support from the male partner. From stakeholders' perception, lack of human resources and fund mobilization, logistic and monitoring issues were the bottleneck for the sustainability of the CC screening program. Structural barriers, lack of knowledge and the suboptimal link between stakeholders and users remain challenges to be faced in order to ensure a resilient, systematic and organized program in Côte d'Ivoire.

Key words: Barriers, cervical cancer, screening, Côte d'Ivoire.

INTRODUCTION

Cervical cancer is the fourth most common cancer in women worldwide, with an estimated incidence of

570,000 new cases and approximately 311,000 new associated deaths in 2018 (Bray et al., 2018). In low- and middle income countries (LMIC), cervical cancer is the second most common cancer among women after breast cancer, and the risk of developing this cancer before the age of 75 years old is estimated at 18.7% (Fitzmaurice et al., 2017).

This malignancy is mainly caused by persistent infection with carcinogenic Human papillomaviruses (HPV), that causes cervical abnormalities and can lead to cancer in absence of preventive actions such as screening and treatment of cervical abnormalities (WHO, 2014). Globally, HPV types 16 and 18, both vaccine-preventable types, are responsible for more than 70% of all cervical cancer cases and were associated with over half of high-grade and one third of low-grade cervical lesions (WHO, 2020; Braaten and Laufer, 2008). Cervical abnormalities can be early detected through cervical cancer screening using visual inspection with acetic acid (VIA), and treated immediately by cryotherapy or thermic ablation when lesions are eligible (WHO, 2013). This strategy known as “screen and treat” approach is recommended by World Health Organization (WHO) since 2013, to reduce the burden of cervical cancer in low-resource settings (WHO, 2013).

In Côte d'Ivoire, cervical cancer is the second leading cause of cancer and the first cause of cancer-related deaths among women, with an age-standardized incidence and mortality rates of 28.6 and 24.1 per 100 000 women, respectively (Bray et al., 2018). The cervical cancer prevention plan implemented by the National Cancer Control Program (NCCP), is based on three main strategies including awareness campaigns to increase knowledge on cervical cancer in the general population, HPV immunization for adolescent females prior to sexual initiation, as well as cervical abnormalities screening and treatment for adult women (NCCP, 2013). The implementation of this plan started since 2010 with the cervical cancer prevention project (CECAP) piloted first in HIV clinics in Abidjan (the city capital) and further scaled up through the integration of cervical cancer screening activities in reproductive health units or maternal and child health (MNCH) units of almost all health facilities across the country (Horo et al., 2012).

Five years after the initiation of CECAP project, a retrospective analyses conducted in Abidjan reported a low coverage of cervical cancer screening estimated to 1.2% of the targeted population (Boni et al., 2019). This result emphasized the need to conduct a deeper evaluation of the cervical cancer prevention activities. The aim of this study was to describe the situation of

cervical cancer screening offer and to ascertain the barriers to cervical cancer screening among women in Abidjan, Côte d'Ivoire.

METHODOLOGY

A mixed methods study was conducted in Abidjan the capital city of Côte d'Ivoire, from February to August 2016. The quantitative component of the study employed a cross-sectional design and consisted in administering a questionnaire to the managers or designated persons of all the health facilities offering cervical cancer screening services in the study area. The qualitative component included focus group discussions (FGD) with beneficiaries of cervical cancer screening and in-depth interviews (IDI) with various stakeholders of the cervical cancer prevention program in Côte d'Ivoire.

Quantitative assessment of cervical cancer screening offer

Population

For the quantitative component, two months prior to the beginning of the study, trained research assistants actively searched for cervical cancer screening units through the study area. All the cervical cancer screening units active since at least one year prior to the beginning of the study were considered. The updated list of facilities offering the cervical cancer screening was approved by the NCCP and formal letters were sent to facility managers requesting to participate to the study.

Procedure

The day of the interview, a face-to-face questionnaire was administered by trained research assistants to the designated person (VIA provider, facility manager or both). This questionnaire allowed collection of data on cervical cancer screening offer including administrative and general characteristics of the facility, type of screening offered, availability of cryotherapy, logistic and supplies, history of stockouts, availability of trained personnel and availability of database for management of clients and appointments. At the end of the interview, a guided tour was done with an observational grid allowing the documentation of all the existing component of cervical cancer screening offer in the facility.

Data management and analysis

Data collected were entered in a database developed with *Epi data 3.1* ("The EpiData Association" Odense, Denmark) and data analysis was performed using *STATA® version 12.0*, Stata Corp, College Station, Texas USA. Quantitative variables were described using medians, while categorical variables were described using proportions and no comparative test was done for this descriptive analysis.

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Qualitative assessment of barriers to cervical cancer screening

In-depth Interviews

For the qualitative component, the list of key stakeholders involved technical and field stakeholders, was provided by the NCCP and a formal letter sent to each of them requesting to participate to an IDI. Once a stakeholder agreed to participate, an appointment was arranged in the stakeholder office or any other place of the stakeholder convenience. An interview guide was developed for the purpose of the study, allowing exploring the following themes health system challenges in cervical cancer screen, leadership and organization of cervical cancer screening, prevention strategies and policy implementation in cervical cancer prevention. The face-to-face interviews were conducted in French, the official language of Côte d'Ivoire, and no translator was needed. When the participant agrees, the interviews were audio-recorded, with a mean duration between 15 and 45 min. An assistant was committed to take handwritten notes and capture additional nonverbal communication signs.

Focus group discussion (FGD)

Population: Clients participating to FGD were selected through purposive sampling among adult women visiting health facilities with cervical cancer screening units. The groups were made up of half of women reporting a history of cervical cancer screening and half of women never screened, with a representativity of age groups <30 years old; 30-49 years old and ≥ 50 years old. Specific FGD were conducted with HIV positive women following the same criteria of age and history of cervical cancer screening. Patients were recruited either among those who came for children's immunization, or those coming for their ARV drug refill or those called by phone by the midwife for the FGDs.

Procedure: A semi-structured interview guide, probing women's attitudes towards cancer in general and anticipated reactions to a cancer symptom was used. Before discussing their experiences of cervical cancer screening and related barriers, women were asked to describe their initial thoughts when receiving a screening invitation and their thought processes around attending or not attending. Women were then encouraged to discuss what could be barriers to attending cervical cancer screening. Women were asked open questions and encouraged to give in-depth descriptions. All the focus group were recorded with the agreement of each participant, and the duration ranged from 30 to 45 min for each FGD. Following the interviews, a short demographic questionnaire was completed assessing age, marital status, ethnicity, religion, birthplace, and screening history.

Data management and analysis of qualitative data

All the recorded data were analysed using a thematic approach, described by Green and Thorogood 2013). The first step consisted in the researcher familiarizing himself with the data. This was done during the transcription, the translation, the reading and re-reading of the interviews and focus group discussion. The second, third, and fourth step involved, respectively identifying codes and themes, coding the data, and organizing codes and themes. In the absence of general thematic framework used in previous studies in the context of West Africa at the time of guide conception, we generated, based on the known or potential bottlenecks of the

cervical cancer prevention program in a such LMIC, a thematic network including awareness and knowledge about cervical cancer, barriers to cervical cancer screening, health systems challenge in cervical cancer screening, leadership in cervical cancer prevention, immunization, strategies of prevention and policies implementation in cervical cancer prevention. The final step aimed at analysing the thematic network, producing a concise and coherent description of the research findings that could answer our initial research question.

Ethical considerations

Ethical approval was obtained for the data collection in Côte d'Ivoire by the Ministry of Health (MoH) through the NCCP. Each participant received an information sheet and consent form to read and to sign before the beginning of the study (interview, FGD, answering to questionnaire). Participants were informed of the audio-recording and gave a verbal consent. All data were anonymized and stored in a password-protected software to ensure participants' confidentiality.

RESULTS

Quantitative component: Assessment of cervical cancer screening offer

General characteristics of cervical cancer screening facilities

A total of 27 cervical cancer screening sites were included, with 13 (48.2%) from the primary level, 11 (40.7%) from secondary level, and 3 (11,1%) from the tertiary level. Out of them, 1 (3.7%) was from private sector and 6 (22.2%) belong to specialized facilities, including 3 (50.0%) for HIV services and 3 (50.0%) for reproductive and maternal health services. Almost all (96.7%) offered HIV testing and antiretroviral treatment when applicable.

Screening and treatment of cervical abnormalities

The totality of the sites had performed cervical cancer screening through visual inspection, 10 (37.0%) offered cytology, 3 (11.1%) and 2 (7.4%) proposed colposcopy and HPV testing, respectively. As regards the treatment of cervical abnormalities, cryotherapy was available in 13 (48.2%) while Loop Electrosurgical Excision Procedure (LEEP) or simple hysterectomy was available in 3 (11.1%) sites. Quantitatively, during the twelve last months, 12 (44.4%) sites screened less than 120 women per year, 6 (22.2%) sites between 120 and 500 and 9 (33.3%) more than 500 women.

Material and supplies

Regarding supplies issues, 24 (88.9%) of the screening

sites had an adequate examination table, 19 (70.4%) of the cervical cancer screening sites had an adequate lamp for screening, 26 (96.3%) had a significant stock of acetic acid. Gas was available for the 13 sites with cryotherapy. With respect to the materials supplied, 66.7% of the sites had experienced a shortage in the recent twelve months; 27.3%, for more than three months; 18.2%, between one and three months; and 54.5%, for less than one month.

The reasons of these shortages were the lack of financial resources (54.5%), temporary unavailability of suppliers (36.4%) and material failure at the national level (18.2%).

Database and client management

Among the sites, 24 (88.9%) used a paper-based form while 3 (11.1%) collect the screening related data through an electronic-based system (excel or access Office). Out of them, 6 (22.2%) had a unique identification of the screened women. A client appointment management system was available in 6 (33.3%) sites.

Human resources

Overall, the VIA-based cervical cancer screening providers were 42 including 28 (66.6%) midwives or nurses and 14 (33.4%) physicians. The provision of cervical cancer screening services had already been interrupted in 9 (33.3%) sites during the last twelve months due to the unavailability of the provider. This gap lasted over one week in 4 (44.4%) sites mainly explained by annual holidays or maternity leaves (44.5%), turn over (33.3%) and congress participation of providers (11.1%).

Qualitative component: Assessment of barriers to cervical cancer screening

Characteristics of women and stakeholders

A total of 38 women aged from 21 to 57 years and recruited at all the levels of the pyramidal health system participated in the focus group discussions. Among them, 44.7% had been previously screened for cervical cancer while 55.3% had never been screened for cervical cancer and 18% were HIV positive.

Regarding the stakeholders, three categories including institutional, technical, and field actors, for a total of 12 stakeholders, were interviewed. Institutional actors were exclusively the ministry of health through the NCCP. Technical actors were officers who contribute, regarding field expertise, to the implementation of cervical cancer prevention; while field actors were those working on the field with patients, either by providing medical or non-

medical services to the population in the setting of cervical cancer management (Annexe 1).

Awareness and knowledge of cervical cancer

Most of clients were not aware about cervical cancer, as told women from a primary care facility: *"I never heard about it, that's why I'm here"* (R1, R3, R4, R5; FGD Riviera).

When they were aware, their knowledge was not sufficient though their initiative to find information about cervical cancer was encouraging. They also highlighted the role of media and healthcare providers (mainly among WLHIV) in cervical cancer awareness.

"I got some information on social media, how to avoid it, the treatment... but I don't know much about cervical cancer, I don't have information" (R2, FGD General Hospital Port Bouet).

"it is a disease of women. I got some information on social media, how to avoid it, the treatment... but I don't know much about cervical cancer, I don't have information" (R2, FGD General Hospital Port Bouet).

"I don't know much about cervical cancer. I never did the test. I heard about it on the TV, the midwife also gave me some information too" (R7; FGD USAC, HIV-positive participant).

"It is a disease that concern women because men don't have womb. It is a dangerous disease that can kill if not diagnosed, if not screened early and if not treated" (R1; FGD Treichville).

"My mum has cervical cancer, so I do some research on internet to get information about it" (R3; FGD Abobo).

Regarding to risk factors and prevention, responses varied from true risk factor, no ideas, to false risk factors.

"R1: it is a disease caused by HPV. Men transmit the disease to women and the disease grows in women" (FGD Abobo).

"I know that having early sexual intercourse can cause cervical cancer. The virus is also present in monkeys" (R7, R3; FGD Abobo).

"I think young girls should avoid having sex early, avoid multiple partners, use condom, like for HIV" (R2; FGD Treichville).

However, wrong knowledge mainly about vaginal cleansing practice and unsafe sex was noted.

“Avoid inserting fingers in the vagina, avoid unprotected sex, don’t use any product to do vaginal toilet” (R4; FGD USAC)

“Having protected sexual intercourse and screen for cervical cancer. Also be careful on what product we use for our private toilet, avoid abortion” (R3; FGD general hospital Port Bouet).

“Avoid using product to shine the skin” (R3; FGD Abobo).

In addition, young women did not perceive at risk of cervical cancer, yielding a lack of willingness regarding to screening.

“We think the disease concern only old women” (R4; FGD Treichville).

Stakeholders also emphasized the lack of awareness about cervical cancer screening among women.

“There is no sensitization as such for me, because there are many patients who come without even knowing why they are there” (Midwife, field actor).

“I think awareness is not sufficiently made. I think we should make a little wider awareness because most of the ladies I received in my practice for cervical cancer were coming from villages” (Medical doctor).

“There are many women who do not know because they told me so” (NGO WILIC field actor).

However, technical stakeholders noted a relative success in expansion of cervical cancer screening awareness, despite the existence of some challenges.

“JHPIEGO has developed sensitization tools and today a larger section of the population is aware. We can’t be 100% happy but for me there are elements of satisfaction” (Technical stakeholder).

Barriers to cervical cancer screening

According to clients, the main barrier to cervical cancer screening is fear of the results especially due to the burden of comorbidities. Among WLHIV, the fear of being tested for both HIV and cervical cancer was a reason for not attending to cervical cancer screening.

“It’s because I don’t have information about the disease” (R3; FGD USAC, HIV-positive participant).

“I’m already sick (HIV), I’m afraid to do it and they would tell me I have another disease, that’s why I haven’t done test” (R4; FGD USAC; HIV-positive participant).

The fear of subsequent implications such as care-related

costs and psychological burden was also pointed by women, mainly HIV-negative who called for a full counselling before screening.

“I just imagine that if I do my test and it come back positive, what would I be? We are afraid, we don’t have the information and even if we have, to do the test at the same time will be difficult. We need to be prepared to receive the information” (R5; FGD Riviera)

However, some women have indicated that having enough information, from the media and from their medical doctors, and seeing the consequences of the disease from a close person encouraged them to voluntarily screen for cervical cancer, which illustrates the importance of knowledge and information to activate intention and motivate women for cervical cancer screening:

“There’s a lot of information about it, on the TV, so I was afraid and asked myself ‘what is this disease?’ That’s what motivated me to do the screening” (R2; FGD Abobo).

R3: “I have seen some people with the disease and the disease is silent... So, the disease develops in you in a silent way and destroys everything and symptoms start 10 to 15 years later when it’s almost late. That’s what motivate me” (FGD Abobo).

Stakeholders also highlighted the close relationship between the knowledge and limited access to the information and admitted the increase in cervical cancer screening attendance when mass campaigns awareness activities were made.

“The first barrier is information and education. When we finally sensitized, we received several patients, but a week or a month later, we see that the attendance decreases” (RIP3C, field actor).

“First they (women) ignore, then we can also say that even the medical personnel do not have the zeal to test the women, but I think it’s starting to come” (NGO WILIC field actor).

“...Women are motivated after the sensitization. There are many patients during our fairground consultation, particularly regarding cervical cancer screening; sometimes we lack equipment to satisfy all the population while the demand is huge” (AIBEF, technical & field actor).

Health system challenges

During the interviews, stakeholders mentioned some

obstacles to cervical cancer screening which in fact are linked to the existing health system. The need of more trained cervical cancer screening providers was reported:

“Our main problem is the early diagnosis, how to educate patient to early diagnosis, how to encourage doctors to do a speculum examination” (SOGOCl, field actor).

In addition, the main challenge seems to be the lack of equipment including essential materials for screening and sensitization, and human resources motivation:

“We lack equipment for screening. Since Jhpiego left we have frequent shortages. We have been closed for three months” (Medical doctor, head of a screening facility). “We meet logistical difficulties in the regular supply of inputs for screening, a deficit in health personnel, and lack of motivation” (RIP3C, field actor).

“At the level of the program, we have only one worker per department. There is also financial problem” (institutional actor)

The full reliability of the government on international partners and limited fund were highlighted by technical stakeholders:

“...Resource mobilization should not come from partners only. The government must be proactive. Foundations and UN agencies only provide assistance” (Technical stakeholder).

A lack of an optimal link between main stakeholders as well as a need of intensive monitoring and evaluation were another health system challenge to be addressed according to stakeholders to prevent frequent shortages:

“We are not in collaboration for now with the National Cancer Control Program (PNLCa). Firstly, a collaboration between NPSP and PNLCa need to be established, so they can define a list of products and inputs they need for screening” (NPSP technical stakeholder).

Another issue cited was the lack of adequate human resources in a context of scarce fund for cervical cancer prevention.

“One of the major problems we face is the human resources. At the level of the program, we have only one worker per department. Of course, there is also financial problem, but even if there’s funds without human resources, our goals wouldn’t be achieved” (institutional actor).

Leadership in cervical cancer prevention

Overall, the involvement of healthcare workers led to

raised awareness and cervical cancer screening uptake as indicated by a WLHIV.

“It is my doctor who gave me information about cervical cancer, he explained to me what cervical cancer is. I did my test, and it was negative, they gave me advice and appointment in one year” (R1; FGD USAC, HIV-positive participant).

However, to overcome barriers to cervical cancer screening, beneficiaries’ expectations from the government for improving cervical cancer screening were unanimously more about sensitization on cervical cancer screening and making the test free:

“I think that the government needs to reinforce the sensitization” (R2; FGD general Hospital Port bouet).

“The government should make the test free for everybody not only for HIV people” (R1; FGD USAC).

Beneficiaries also called on the MoH to consider all the areas of the country in the implementation of awareness campaigns strategies. That includes for them different parts of community aspects (religious, market, etc).

R (all): “sensitization, not only in the hospital but everywhere. In the market, in the church, mosque. Using media” (FGD Riviera).

R4: “The government should focus on information; people don’t know about cervical cancer. Ministry of women, children and family should also sensitize about it, not only the ministry of health” (FGD Treichville).

Women recognized their place in the spreading of the information about cervical cancer prevention.

R5: “more sensitization. Even among us we need to talk about it. We are not supposed to always wait for the government. Those who have been screened need to share the information” (FGD Treichville).

R3: “we need to immunize our children, our young girls since I know now that the vaccine is available” (FGD Treichville).

DISCUSSION

This study has explored the cervical cancer screening in Abidjan, Côte d’Ivoire, focusing on the stakeholders and users, and reviewing the difficulties encountered in the execution of the policies. To the best of our knowledge, this study is the first in Côte d’Ivoire which addresses the issue of cervical cancer screening, aiming to identify the obstacles to a systematic and organized screening. Findings have shown common barriers to cervical cancer

screening with others studies carried out in Africa (Isa Modibbo et al., 2016, Francis et al., 2013; De Abreu et al., 2013; Maseko et al., 2015; Adewole et al., 2005).

The results showed that the lack of awareness and knowledge about cervical cancer is recognized by both stakeholders and women as a major barrier toward cervical cancer screening. This finding corroborates that of multiples studies across sub-Saharan Africa, in which knowledge was also found to be a constant barrier to cervical cancer screening among women (Chidyaonga-Maseko et al., 2015; Lim and Ojo, 2017). A study in Ghana noted the existence of myths and misconceptions about cervical cancer that lead to strong hindrances to screening (Williams et al., 2013). A similar finding was found in Nigeria where the impact of religious affiliation on knowledge about cervical cancer was highlighted (Isa Modibbo et al., 2016). Specific cultural interventions involving communities and religious leaders should be encouraged. Nevertheless, some women had appropriate knowledge of cervical cancer and others had some misunderstanding and misconceptions. Multiple hypotheses could explain this fact, including the level of education, which is a major element contributing to adequate knowledge on health subjects and utilization of health services including screening (Compaore et al., 2016; Aina et al., 2020). The disparity in the knowledge about cervical cancer could also be explained by the lack of continuity of information, from public health campaigns on specific, dedicated time of year (that is women's day, Pink October), to routine information received during doctor's appointment visits. Previous studies reported a high knowledge and acceptability for cervical cancer screening after an information or an encouragement from a healthcare worker, resulting in a better utilization of cervical cancer screening services (Compaore et al., 2016; Getachew et al., 2019).

Structural barriers such as the lack of equipment, of human resources and the disintegration of the response were cited as important barriers to the cervical cancer screening. The lack of equipment and human resources was also corroborated by the site assessment conducted as part of this study. Studies have shown that the successful implementation of cervical cancer screening is dependent upon strong health systems, including adequate equipment and human resources. In Tanzania, insufficient staff involved in screening delivery, inadequate treatment and referral provision, or record keeping were some of the challenges which contributed to the failure of health systems in implementing effective cervical cancer screening and treatment programs (Mugassa and Frumence, 2020; McCree et al., 2015). Human resources concerns such as inadequate training, staffing shortage and staff turnover were reported in other settings (Chary and Rohloff, 2014; Rosser et al., 2015).

Although the majority of participants in the FGDs acknowledged the importance of screening, some

expressed the concern about the real cost of the procedure. The communication strategy about cervical cancer prevention seems to focus only on the disease but for the success of the screening, it should be accessible to the population. In the field, the cost of the screening was not uniform, it was free for HIV patients, but not free for HIV negative in some centre. This has been a barrier for some women. Financial limitations, frequently pointed out in studies in sub Saharan Africa (Lim and Ojo, 2017; Ndejjo et al., 2017) suggests a need for a universal health insurance facilitating access to cervical cancer screening and treatment relative costs in constrain resource resource-constrained settings.

To summarize, the lack of awareness and knowledge of cervical cancer is a consequence of the powerlessness of service delivery, information and leadership/governance in the system building block of the WHO health system framework. As suggested by one stakeholder, screening for cervical cancer shall be integrated in primary health care as essential health package and routinely offered to all women at all level of health care.

Several women in the study quoted as part of the barriers of cervical cancer screening the fear and the worry about pain. Similar findings named psychological barriers were found by others authors (De Abreu et al., 2013; Waller et al., 2012; Marlow et al., 2015). However, these psychological barriers are generated by the lack of knowledge. Another type of barriers to cervical cancer screening are the one coming from the health workforce, the medical product and technologies, the financing and the leadership/governance. The majority of stakeholders recognized the shortage of health workers and inputs for screening, the lack of funds, and the absence of clear leadership in the prevention of cervical cancer. At the institutional level, the objective is to define the national policies and strategies for cervical cancer prevention, and insure their implementation. However, the national cancer control program of Côte d'Ivoire is a young program (eight years), and it appears as for most cervical cancer screening and treatment program in Africa that the program has been created either without clear goals and objective (Maseko et al., 2015), or without plan of sustainability after the experimental phase. In the course of the interviews, many stakeholders highlighted the great job accomplished by *Jhpiego*, one of the technical partner during the implementation phase. The same stakeholders also raised complaints on the difficulties to sustain the activity after the implementation phase because *Jhpiego* is not more in control of the screening centre. In view of this, the sustainability of the implemented program should be prioritised by the government (Leadership/Governance).

The study also found that staffing pattern and scheduling health worker remain a challenge for the cervical cancer screening at different levels of stakeholders. Medical doctors and midwives call attention

on the necessity for the screening centre to be well staffed in order to deliver quality service to the population in need. This has been pointed out by studies which showed that inadequate staff training in screening, treatment, referral, and record keeping are some of health challenge which have contributed to failure of health systems in implementing effective cervical cancer screening and treatment programs (Bradley et al., 2005; Agurto et al., 2005). Moreover, human resources issue has been observed at the institutional level of cervical cancer prevention where shortage of staff is an obstacle for a proper monitoring and evaluation of cervical cancer screening program.

This study has permitted us to reveal the hindrances to cervical cancer screening in Côte d'Ivoire, which can be used to improve the scaling-up of a systematic and organized cervical cancer screening program. Given the fact that the barriers to cervical cancer screening are intimately linked to the WHO building blocks of health system, systems thinking appears as an untapped solution with a huge potential to address health system challenge in cervical cancer prevention (Savigny and Adam, 2009). Recent projects have used systems thinking to address specific public health problems like tobacco consumption, obesity and tuberculosis (NCI, 2007; Finegood et al., 2009; Alan, 2009); this could also be applied to address cervical cancer challenges. Moreover, the effectiveness of cervical cancer screening program in Africa depends on the will of government's leaders to recognized cervical cancer as a major public health problem like malaria, HIV and tuberculosis.

Limitations

This study presents some limitations. The site assessment addressed the sites registered in the database of the NCCP and those from NGOs affiliated. Some hidden screening sites, located in some private centres have not been assessed leading to a low representability of the results. However, the prospective survey across facilities in Abidjan prior this study helped to mitigate the risk of sites selection bias. In addition, the site assessment was done previous to the publication of the WHO toolkit which is currently used to address the evaluation of capacities of sites (NCDs, 2020). Although, this is among the first study in Côte d'Ivoire to describe barriers to cervical cancer screening. Findings from this survey should be considered as advocacy-based document to strengthen the cervical cancer screening delivery. Addressing the hindrances reported could anticipate the challenges of a systematic and organized cervical cancer screening program. Further studies could be conducted to measure and classify the impact of patients and health system related barriers, which could also yield prioritized actions from the MoH in Côte

d'Ivoire.

CONCLUSIONS/RECOMMENDATIONS

This mixed study revealed that women lacked knowledge on cervical cancer and its methods of prevention. In a context where women seldom have contact with the health care system, unless in regard to pregnancies or their children, such opportunities should be used to ensure the continuity of information. By extension, every woman presenting to a health centre for any service should be able to receive simplified and understandable information about cervical cancer and a screening proposal. In addition, there is a need for additional advocacy for funding in cancer prevention and control and the acknowledgement of cancer by national entities as a major public health problem. Effort should be put among cancer stakeholders including the NCCP with the technical support of the international organizations for a coordinated approach to cancer control, particularly with prevention which should be a priority for sub-Saharan Africa national cancer response. A suboptimal link between stakeholders and users remain challenges to be faced in order to reach a resilient, systematic and organized program in Côte d'Ivoire.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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